ENERGY STAR® FOR RESIDENTIAL LIGHT FIXTURES - QUALITY ASSURANCE TESTING GUIDELINES AND PROCEDURES MANUAL

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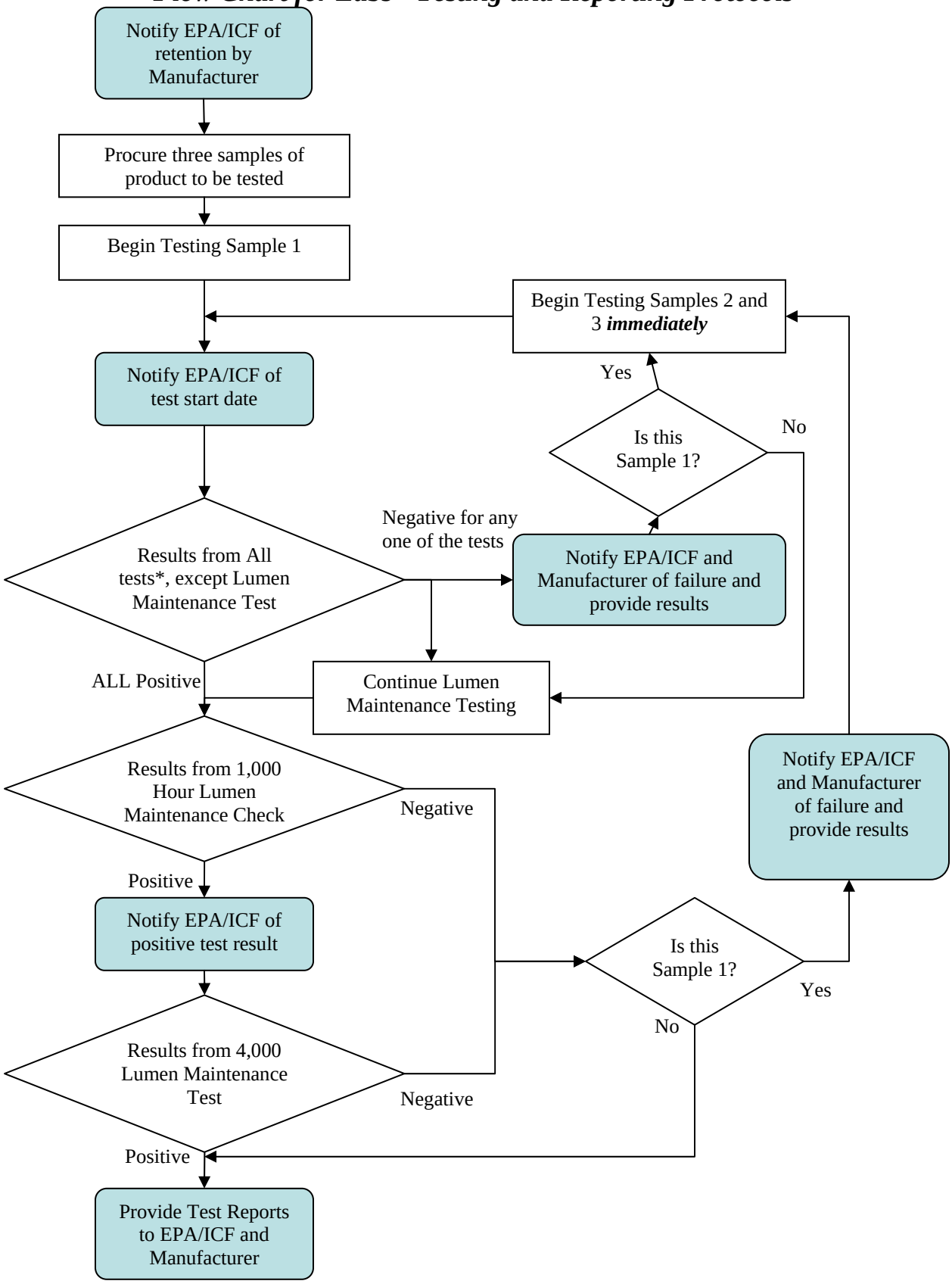
Flow Chart for Labs - Testing and Reporting Protocols



Note: *All tests refer to both consumer informational parameter tests and performance parameter tests

Section 1: EPA Selection of Fixture Manufacturer

1) Product Selection
   a. EPA may select products for Quality Assurance (QA) testing at any time, but will largely do so in batches.
      i. Initial selection of QA list begins with products recommended for testing by the Environmental Protection Agency (EPA), the Department of Energy (DOE) and Energy Efficiency Program Sponsors (EEPS).
      ii. Additional products may be nominated by retailers, designers, homebuilders, other manufacturers, etc.
      iii. Additional products selected randomly from the ENERGY STAR product list.
      iv. List is rationalized by EPA.
         1. Eliminate duplicates (multiple private-label versions of the same product).
         2. Eliminate over burden (i.e., no manufacturer will have more than 2 lamp/ballast platforms selected for QA testing per year).
         3. Eliminate products for additional reasons.

   b. EPA shall notify each manufacturer that their product(s) have been selected for QA testing and specify a deadline for manufacturer to contract with a manufacturer-independent National Voluntary Laboratory Accreditation Program (NVLAP) accredited testing laboratory (10 business days). The count down starts upon receipt of Notification Letter as verified by express mail delivery notification. An example of the manufacturer notification letter is available in Appendix A.

Section 2: Manufacturer Selection of Testing Laboratory

(Timeline - The manufacturer shall retain a testing laboratory within ten business days of notification from EPA, with EPA express mail delivery notification date counting as day one)

1) The manufacturer shall retain a qualified third-party NVLAP accredited testing lab within 10 business days of EPA notification. EPA recommends that manufacturers establish task order agreements with one or more labs to expedite both initial qualification and QA testing. A list of NVLAP accredited testing labs is available in Appendix B.
   a. The manufacturer shall authorize the laboratory to share all test data and results with EPA.

2) The selected laboratory shall notify EPA/ICF, via email to ehaines@icfconsulting.com, that the lab has been retained by the manufacturer. Notification should be sent within two working days of contract or purchase order from the manufacturer.

Section 3: Laboratory Fixture Procurement and Sampling Guidelines

(Timeline - The laboratory shall procure three samples of the fixture within 45 calendar days of retention by manufacturer, with notification of retention by manufacturer to EPA/ICF counting as day one)

I. Fixture Procurement

1) Receive confirmation from manufacturer that you have been retained for testing of their RLF products for ENEGY STAR QA.

2) Notify EPA/ICF, via email to ehaines@icfconsulting.com, that your lab has been retained by the manufacturer. This notification should be sent within two days of availability of confirmation from manufacturer.

3) Initiate procurement of samples of specified products from the open market.

II. Sampling Guidelines:

1) Sometimes there might be two versions of the same model available in the market built to different versions of the ENERGY STAR for Residential Light Fixture specification. Confirm with manufacturer the date the product was manufactured. Test only those products that were manufactured on or after October 1, 2005.

2) Procure three samples of the product from a retailer, E-tailer or wholesaler. A walk-in purchase, catalog mail order purchase or online purchase is acceptable. If product is not available through distribution then it may be purchased manufacturer direct.

3) Buy products from retailer or distributor where possible (with direct purchase from manufacturer where there is no retailing).

4) Specify protective packaging such that the fixture is not damaged in any way that affects EPA required tests.

5) Ensure all three samples purchased from different retailers are of the same specifications.

6) Store procured samples in conditions that do not affect the specifications of the product. The sample should be stored along with the packaging until product is removed for actual testing.

Please refer to NVLAP Handbook 150 (2001 Edition) – Procedures and General Requirements, section 5.7, for further guidelines on sampling procedures.

Section 4: Sample Handling Procedure

(Follow the procedures described in the NVLAP NIST Handbook 150-1 and the steps described below)

I. Procedure for Specimen (also referred to as sample, product and test luminaire interchangeably) Identification

1) Each sample shall receive a distinct identification number. This identification number shall be retained throughout the life of the item in the laboratory.

2) Samples shall be stored in their original packaging in an organized and orderly manner within the lab to facilitate easy identification and re-collection during the testing process.

3) The testing request Purchase Order form will accompany the test luminaires through 100-hour photometry to ensure that the testing requirements are accurately and completely communicated.

4) Each test luminaire (including the lamp and ballast) that constitutes a unique test is assigned a unique test number. This test number is a sequential number.

5) The test number, including the lamp number, is permanently marked onto the lamp and ballast and is retained throughout the life of the test.

6) Upon receipt of the test luminaires, inspect the model numbers to ensure that they are the same as the luminaires on the Purchase Order. In addition the samples will be visually inspected for any abnormalities, which may render the sample unsuitable for testing. In such cases the laboratory will contact EPA/ICF before proceeding.

7) The areas where test luminaires are stored should not have unusual or harsh environmental conditions. Lamps by their nature do not deteriorate when stored in normal environments; thus, no special practices are needed for the storing of fixtures.

II. Procedure for Reviewing Customer Requirements and Accepting Work in the Testing Laboratory

1) Laboratory receives Test Request or Purchase Order from manufacturer (via email, fax or letter) for ENERGY STAR quality assurance testing

2) Qualified staff reviews each completed request form for completeness to assure satisfactory information is received and reviews and assures the following:
   a. The testing requirements, including the methods to be used are adequately defined, documented and understood.
   b. The Lab capability and resources to meet the requirements are assessed and assured suitable (including timeframe).
   c. The appropriate methods are selected for meeting the requirements.

1) Any changes after the initial agreement must be submitted by the client, using a revised PO and are subject to the same review process. In addition, EPA/ICF must be informed of any changes the client requests.

III. Procedure for Specimen Preparation

1) Carefully disassemble the fixture and remove the lamp/ballast combination. Ballast, socket, and lamp must be removed without damage to their components. Electrical connections should be disconnected in a manner where they can be easily reconnected without any change in electrical current being supplied to the socket, ballast, and lamp.

2) Note the designed lamp positioning and orientation inside the fixture (horizontal, vertical, or degree of tilt). The lamp orientation during the test should be the same as the intended application or the manufacturer's recommendation

3) Lamp bulbs should be kept clean of finger prints and any kind of contamination that might interfere with lamp performance. Clean cloth gloves should be worn when handling lamps for testing.

4) The glass surface of the lamp should be wiped with a clean soft cloth and alcohol to remove any oils or outside contamination. Dust and debris may be removed with "Dust Off" or a flow of clean air.

5) All lamps should be seasoned prior to testing unless otherwise specified. Typically, discharge lamps need 100 hours. Refer to IES LM 54.

6) The orientation of lamps should be maintained as it is moved from the aging rack to the testing equipment (e.g. Integrating Sphere). If orientation is disturbed, a pre-burn is required.

Section 5: Sample Testing and Reporting

Step 1: Notify EPA/ICF, via email to ehaines@icfconsulting.com, with a copy to the manufacturer that you have begun testing of samples. Notification should be sent out within a day of testing start date.

a. Begin with only one of the samples procured, henceforth referred to as Sample 1. The remaining two samples will be tested only if Sample 1 fails.

Step 2: Complete a visual inspection of Sample 1 product packaging and fixture housing (if applicable) to determine if the Consumer Informational Parameters described in Table 1, below are met.

Step 3: If the sample fails one or more of the consumer informational parameters, immediately notify EPA/ICF via email to ehaines@icfconsulting.com. Attach to the email a digital photograph of the product(s) packaging and the lamp(s).

Table 1: Consumer Informational Performance Characteristic, ENERGY STAR specification and Methods of Measurement s

Performance Characteristic	ENERGY STAR Specification	Methods of Measurement
Product Packaging for Consumer Awareness Requirements	For fixtures that are not shipped with lamps, product packaging must include a list of lamps types that would ensure ENERGY STAR quality and performance when paired with the qualifying fixture. This list must be clearly visible to the consumer on the fixture packaging. Manufacturers are not required to provide specific lamp manufacturer names and model numbers on the packaging. Rather, generic lamp listings, such as the NEMA or ANSI generic descriptions including a color designation (e.g., F32T8/830 or CFQ26W/G24q/827), will suffice. In addition, packaging should suggest that consumers select a lamp with a rated life of 10,000 hours or more. **Note: only recessed downlight fixtures, recessed downlight retrofit kits, and fixtures using linear lamps may ship without a lamp.** For fixtures that are shipped with lamps, product packaging language is required that clearly describes the nominal color designation of the lamp in units of Kelvin (i.e., 2700K, 3000K, 3500K, 4100K, 5000K, or 6500K). For recessed downlight fixtures that are IC-Rated, product packaging must clearly state this rating. The language must be clearly visible on the product packaging. The IC-Rated designation will also be included in the fixture description included in the Qualified Product list posted on the ENERGY STAR Web site. Sample language: "IC-Rated for direct contact with insulation". For recessed downlight fixtures that are Air-Tight (AT) rated, product packaging must clearly show that the fixture produces less air leakage than 2.0 CFM at 75 Pascals when tested in accordance with ASTM E283. The language must be clearly visible on the product packaging. The "air tight", or similar, designation will also be included in the fixture description included in the Qualified Product list posted on the ENERGY STAR Web site. Sample language: "Certified Air Tight per ASTM E283."	Visual Inspection Pass/Fail
Lamp Labeling	For lamps shipped with fixtures, a manufacturer	Visual Inspection

Requirement	designation that encompasses the lamp manufacturer name, wattage, correlated color temperature, and color rendering index must be labeled on the lamp or lamp base.	Pass/Fail

Step 4: Begin performance parameter testing of Sample 1 in the sequence provided in Table 2, below. The start date of tests is considered as day one. Notification should be sent out within one working day of availability of test results.
(Timeline – The laboratory shall complete all tests [except lumen maintenance, which should be started but cannot be completed] within 19 calendar days of notification of test start date to EPA/ICF.)

a. If test results for all tests for Sample 1 are positive then continue with Lumen Maintenance test to completion.

b. If test results for any of the tests on Sample 1 are negative begin testing Sample 2 and Sample 3 immediately. Repeat steps 2 onwards for BOTH Sample 2 and Sample 3.

i. Send notification to EPA/ICF and manufacturer, via email to ehaines@icfconsulting.com, of the performance parameter that failed, the date of failure and the date that testing began on the other two fixtures, within two days of the sample 2 and 3 testing start date.

ii. Continue testing Sample 1 to completion.

Step 5: Lumen Maintenance Check (1,000 hour)
(Timeline – The laboratory shall complete 1,000 hours lumen maintenance check within 75 calendar days after notification of test start date to EPA/ICF)

a. Lumen maintenance check must be checked at 1,000 hours, regardless of rated lamp life, to ensure that the lamp maintained 80 percent of its initial lumen output.

i. If test results for 1,000 hours of lumen maintenance are positive then continue lumen maintenance test to completion.

ii. If test results for 1,000 hours of lumen maintenance are negative then continue with lumen maintenance test on Sample 1 to completion and begin testing Sample 2 and 3 immediately. Repeat steps 2 through step 5b for BOTH Sample 2 and Sample 3. Send notification via email to EPA/ICF and manufacturer of the performance failure date and the date that testing began on the other two fixtures, within two days of the sample 2 and 3 testing start date.

b. Lumen Maintenance Test (4,000 hour)
(Timeline – The laboratory shall complete lumen maintenance test within 240 calendar days after notification of test start date to EPA/ICF)

i. If , at 4,000 hours, the Lumen Maintenance test is negative then ***immediately*** repeat steps 2 onwards for BOTH Sample 2 and Sample 3. Send notification via

email to EPA/ICF and manufacturer of the performance failure date and the date that testing began on the other two fixtures, within two days of the sample 2 and 3 testing start date.

Table 2: Performance Parameter Characteristic, ENERGY STAR specification and Methods of Measurement Reference Standards

Performance Characteristic	ENERGY STAR Specification	Methods of Measurement Reference Standards
ANSI or IEC Lamp Base	For lamps indicated on the fixture packaging or shipped with the fixtures, lamps must utilize an ANSI/IEC standardized lamp base configuration, as defined by ANSI C81.61 and IEC 60061-1. The lampholder must be designed to accept lamps with ANSI/IEC standardized lamp base configurations for all applicable wattages. For example, if the ballast can operate lamps with multiple wattages (e.g., an 18W, 26W, or 32W lamp) then the lampholder must be designed to accept lamps with ANSI/IEC standardized lamp base configurations for all three applicable wattages.	ANSI or IEC Lamp Base ANSI C81.61; IEC 60061-1
Measured Maximum Ballast Case Temperature During Normal Operation Inside Fixture(s)	Not to exceed the ballast manufacturer maximum recommended ballast case temperature during normal operation inside a fixture. **Note:** This performance characteristic is separate and distinct from thermal requirements established by UL, which governs safety rather than longevity of the ballast. All qualified fixtures are expected to meet this requirement, including linear, suspended, close-to-ceiling, IC, ICAT and Non-IC recessed canisters, etc. as well as those fixtures that may be exempt from UL1598.	UL 1598, Section 11 (Acceptable when the thermocouple is placed at the hot-spot location indicated by the ballast manufacturer.) -OR- Lighting Research Center (LRC) "Proposed Durability Testing Method: Temperature" available at http://www.lrc.rpi.edu/programs/lightingTransformation/pdf/durabilityTestingFinalReport.pdf **Note:** All qualified fixtures are expected to meet the Measured Maximum Ballast Case Temperature During

		Normal Operation Inside Fixture(s) requirement. This includes every qualified fixture
System Efficacy: Lamp Lumens Input Power	≥ 50 LPW for all lamp types below 30 total listed lamp watts. ≥ 60 LPW for all lamp types that are ≤ 24 inches and ≥ 30 total listed lamp watts. ≥ 70 LPW for all lamp types that are > 24 inches and ≥ 30 total listed lamp watts.	IESNA LM-9; LM-66; ANSI C82.2
Color Rendering Index	For lamps shipped with the fixtures, the color rendering index must meet the following requirements: ≥ 80 for compact fluorescent lamps. ≥ 75 for linear fluorescent lamps. If the lamp is not shipped with the fixture, product packaging must meet the requirements set forth in the "Product Packaging for Consumer Awareness" section of this Table.	IESNA LM-58; CIE 13.3
Correlated Color Temperature	For lamps shipped with the fixtures, the lamps must have one of the following designated correlated color temperatures (CCT): 2700K, 3000K, 3500K, 4100K, 5000K, or 6500K. If the lamp is not shipped with the fixture, product packaging must meet the requirements set forth in the "Product Packaging for Consumer Awareness" section of this Table.	IESNA LM-58; LM-16
Lamp Start Time	The time needed after switching on the lamp to start continuously and remain illuminated must be an average of one second or less.	ANSI C82.11-5.2
Lumen Maintenance	For lamps indicated on the fixture packaging or shipped with the fixtures, the lamp shall have an average rated lumen maintenance of at least 80% of initial lamp lumens at 40% (4,000 hours minimum) rated lamp life.	IESNA LM-40-01; IESNA LM-9-99; IESNA LM-65-01; IESNA LM-66-00; ANSI C78.5

Section 6: Sample Testing Final Report (ALL Tests)

(Timeline – The laboratory shall complete all tests, including lumen maintenance test within 240 calendar days after notification of test start date to EPA/ICF)

1) Notify EPA/ICF and manufacturer that all tests, including Lumen Maintenance test, have been completed.

    a. If test results for all tests for Sample 1, including Lumen Maintenance test, are positive then complete the reporting form (Lab Test Report Template) and return electronic file to manufacturer and EPA/ICF via email to ehaines@icfconsulting.com.

    b. If Samples 2 and 3 were also tested, complete the reporting form (Lab Test Report Template) for all three samples and return electronic file to manufacturer and EPA/ICF via email to ehaines@icfconsulting.com.

Lab Test Report Template Sample

NVLAP Laboratory Information
Laboratory Name:
Contact Name:
Phone Number:
Fax Number:
Mailing Address:
Email Address:
Date of Agreement between Laboratory and Manufacturer:
Date Samples Purchased:
Date Sample One Testing Began:
Date Sample Two and Three Testing Began:
Date Additional Testing Completed:
Fixture Information
Fixture Manufacturer:
Fixture Model: Number
Number of Ballasts/Fixture:
Fixture Purchasing Information
Purchase Date:
Purchase Location (city and state):
Purchase retailer or wholesaler name:
Lot Number and/or production date and/or other identifiers:
Consumer Information Parameters
Product Packaging:
Lamp Labeling Information:
Lamp & Ballast Information
Number of Lamps/Ballast:
Individual Listed Lamp Wattage:
Lamp Type:
Lamp Size:
ANSI or IEC Lamp Base Type:
Lamp Manufacturer:
Lamp Model Number:
Ballast Manufacturer:
Ballast Model Number:
Target CCT (per product packaging):

Lab Test Report Template Sample Continued

I. TEST RESULTS

Test Results for Combined Lamp & Ballast Requirements			
Lamp & Ballast (Sample)	Luminous Flux (Lumens)	System Power (Watts)	System Efficacy
1			
2			
3			
Pass/Fail			

Test Results for Lamp Requirements				
Lamp (Sample)	1,000 Hour Lumen Maintenance Check (%)	4,000 Hour Lumen Maintenance Result (%)	Color Rendering Index (CRI)	CCT Sample that fall within 7-step Mac Adam ellipse
1				
2				
3				
Pass/Fail				

Test Results for Ballast Requirements		
Ballast (Sample)	Lamp Start Time (ms)	Maximum Measured Ballast Case Temperature During Normal Operation **Inside A Fixture** (degrees Celsius)
1		
2		
3		
Pass/Fail		

II. INSERT APPROPRIATE MAC ADAM ELLIPSE TEMPLATE

III. INSERT SAMPLE PACKAGING IMAGE

IV. INSERT LAMP LABELING IMAGE

APPENDIX A: Quality Assurance Notification Letter

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

Date

Name
Title
Company
Address
City, State Zip

Dear [Name]:

As you are aware, the *ENERGY STAR® Program Requirements for Residential Light Fixtures (RLF): Version 4.0* includes a Quality Assurance Testing System. The purpose of this letter is to notify you that the Environmental Protection Agency (EPA) has selected [company name] fixture model [XXX] for quality assurance testing.

Per the requirements of the Quality Assurance Testing System [company name] is required to commission third-party testing of the specified fixture by a manufacturer-independent National Voluntary Laboratory Accreditation Program (NVLAP) accredited testing laboratory (a list of NVLAP accredited, manufacturer-independent laboratories is provided below). The following performance parameters must be tested and the following consumer information must be verified.

Performance Parameters:

- Efficacy
- Correlated Color Temperature
- ANSI or IEC Lamp Base Type
- Maximum Ballast Operating Case Temperature During Normal Operation Inside Fixture(s)
- Lamp Start Time
- Color Rendering Index (CRI)
- Lumen Maintenance

Consumer Informational Parameters

- Product Packaging
- Lamp Labeling Information as written on the lamp or lamp base (manufacturer designation that encompasses the lamp manufacturer name, wattage, correlated color temperature, and CRI)

The testing laboratory is required to procure three (3) samples of each fixture on the open market (if possible), with the first sample used for initial testing. Please provide the testing laboratory you are working with a list of sources where this fixture can be purchased. If all performance

parameters are met during initial testing, the second and third samples will not be tested, unless the first sample becomes damaged or is otherwise unavailable for testing. If the first sample fails one of the consumer informational parameters, EPA will contact you, the manufacturer, to resolve the failure. If the first sample fails one of the performance parameters, the second and third samples will be tested for all of the performance parameters.

If two or three samples fail to meet the same performance parameter of the ENERGY STAR specification or if you fail to submit test data within the time frame described above, the model and related models, (same lamp/ballast platform) will be considered for corrective action or unqualified; the situation will be addressed under EPA's *Standard Operating Procedure for Performance Failures* and the model may be removed from the ENERGY STAR Qualified Product list as addressed under EPA's *Delisting Protocol*. Both of these documents are included below.

[Company Name] NEXT STEPS:

1. Within 10 business days of this notification you should commission a third-party, manufacturer-independent, NVLAP accredited testing laboratory and direct the laboratory to begin testing. You are required to authorize the laboratory to release all test data and results to EPA. Your receipt of this letter, verified through express mail tracking, begins the 10 day count down.
2. The laboratory is given 45 calendar days to procure three samples and commence testing. Testing should commence upon receipt of the samples and the laboratory is to immediately inform EPA of testing start date via email to ehaines@icfconsulting.com.
3. The laboratory is to complete all testing, except for lumen maintenance, on the first sample within two weeks of notifying ICF Consulting of the testing start date. All testing of the first sample must be complete within 240 calendar days of testing start date.
4. If the first sample fails any performance parameter, the laboratory is to begin testing second and third samples immediately. The laboratory must immediately notify EPA via email to ehaines@icfconsulting.com with the exact date that second and third sample testing began. Testing must be completed within 240 calendar days of the first sample failure. Attached to this letter are *Laboratory Testing Instructions* and a *Test Report template*. Provide these documents to the manufacturer independent NVLAP accredited laboratory that is performing the tests. Instruct the laboratory to send the test report to Evan Haines at ehaines@icfconsulting.com.

Should you have any questions, please contact Evan Haines at ehaines@icfconsulting.com. Your prompt and careful attention to this important matter is appreciated.

Sincerely,

Andrew Fanara, Manager
ENERGY STAR® Product Specification Development
U.S. EPA (MC6202J)
1200 Pennsylvania Ave., NW
Washington, DC 20460

APPENDIX B: Manufacturer-Independent NVLAP Accredited Laboratories

(As of November, 2005, Check www.nist.gov/nvlap or call (301) 975-4016 for any updates)

Aurora International Testing Laboratory Joe Marella Laboratory Manager 300 Lena Drive Aurora, OH 44202 330-995-1335 330-995-1343 (fax) jmarella@aitesting.com	**Bay Area Compliance Laboratory** (BACL) Annie Jiang Project Coordinator 1274 Anvilwood Avenue Sunnyvale, CA 94089 408-732-9162 x3203 408-732-9164 (fax) annie.jiang@baclcorp.com
CSA International Tim Gentry, CSA International 2210 Justin Trail Alpharetta, GA 30004 678-992-0134 770-500-3948 (fax) Tim.Gentry@CSA-International.org	**Intertek ETL SEMKO** Todd A. Straka Business Manager Lighting & Cabling Products 3933 U.S. Route 11 Cortland, NY 13045 607-758-6280 607-758-6637 (fax) todd.straka@intertek.com
Underwriters Laboratories Inc. Juan M. Caamano, Jr. 1285 Walt Whitman Road Melville, NY 11747-3081 631-271-6200 x22752 631-439-6190 (fax) Juan.m.caamanojr@us.ul.com	

APPENDIX C: Delisting Process

Background
Any ENERGY STAR program change may lead to confusion due to the carryover of ENERGY STAR qualified inventory that does not meet the new specification/enforcement criteria. But, much of this can be avoided through advanced notification and preparation. Since EPA's Residential Light Fixture Specification, Version 4.0, Quality Assurance testing, and Challenge testing efforts will be conducted on an ongoing basis, it is important to devise a procedure for removing unqualified models from the ENERGY STAR Web site that balances the need to enforce the ENERGY STAR specification with minimizing customer confusion and disruption to the marketplace.

With valuable input from partners, EPA has established the following protocol as a way to inform retail and utility/state/regional partners (Energy Efficiency Program Sponsors or EEPS) of the de-listing determination and notification process. Part I describes the procedure for determining which models will be de-listed and associated timelines. Part II focuses on how the changes will impact the Web site at www.energystar.gov.

Note: EPA has established a Standard Operating Procedure (SOP) for manufacturers to follow when the ENERGY STAR qualification status is called into question. The protocol below describes the steps that EPA will take after all options defined in the SOP are exhausted. The SOP is available in Appendix D.

Part I. Procedure for Product that Fails to Meet Performance Parameters or Consumer Informational Parameters

1) If manufacturer or laboratory supplied information, submitted according to previously defined Standard Operating Procedures, that is either:
   a) Complete, but indicates the product does not meet the required performance threshold; Or
   b) Insufficient to determine whether the product meets the required performance threshold; Or
   c) Manufacturer(s) fail to respond to EPA request for additional documentation or testing; Then:

   EPA will send written notification to the manufacturing partner stating that their product is no longer ENERGY STAR qualified, and will be removed from the ENERGY STAR Qualified Product List on the Web in **30 days**.
   Note: Information supplied to EPA by third parties (such as a consumer) will be handled on a case-by-case basis.

2) While this follow-up is conducted with manufacturers, EPA simultaneously notifies retail partners and EEPS in writing that the product in question is considered "unqualified," and will be "de-listed" from the ENERGY STAR Web site in 30 days. EPA will consolidate individual notices into one written letter if multiple products are deemed unqualified at the same time. ("Unqualified" Product – Product does not meet the current ENERGY STAR program requirements/specification. "De-listed" Product – Product does not meet the current ENERGY STAR specification, and does not appear on the current ENERGY STAR qualified product Web list.)

3) At the end of the 30-day time period, products described in sections 1a through 1c above will be "de-listed" from the ENERGY STAR Web site for a **minimum of six months.** The affected manufacturer and all retail, wholesale and EEPS partners will be sent written notices of this product de-listing immediately. The notice sent to the manufacturer will contain language to the effect: "Only those products that meet ENERGY STAR specification can bear the ENERGY STAR label. Therefore, manufacturers must cease labeling unqualified product immediately and cease shipment of already labeled product within 30 days."

3a) at any time before or after the six-month de-listing period partner may resubmit products for re-qualification. However, products will not be re-listed until after the six-month time period is complete.

4) Starting from the time the de-listing notification (described in step 3 above) is received by retail and wholesale partners and EEPS, existing stock marked ENERGY STAR is allowed **six months** to sell through from retail and wholesale inventories. This provides six months of continued sales to customers to eliminate existing inventories. EPA understands that EEPS at their own discretion will decide whether to fulfill rebate requests on ENERGY STAR marked models in retail outlets that are no longer listed on the ENERGY STAR Web site. At the end of the six months, retailers and wholesalers are to cover the ENERGY STAR label on any unqualified product they still wish to sell.

5) If a manufacturing partner chooses to continue to distribute the de-listed product to the market, EPA will remind the manufacturer that the ENERGY STAR cannot be associated with "unqualified" products, and the ENERGY STAR mark must be removed from existing stock and product literature immediately. EPA will further remind the manufacturer that ENERGY STAR is a registered trademark of EPA and will direct them to the ENERGY STAR Identity Guidelines. EPA reserves the right to terminate the ENERGY STAR Partnership if the manufacturing partner is found to be in clear violation of the current specification or is promoting "unqualified" product as ENERGY STAR.

Part II. Procedure for How the De -Listings will be Portrayed on the Web site:

1) Only those products that meet the current RLF Specification can appear on the qualified product list on the ENERGY STAR Web site.

2) Unqualified products will be posted on the ENERGY STAR Web site along with manufacturer name, model number, date of de-listing, and a standardized note explaining why the product was de-listed. (e.g., "Retired Product - Removed from Web site per manufacturer request" or "Unqualified Product - Removed from Web site due to failure to meet ENERGY STAR specification.")

Questions about this Protocol can be directed to David Shiller, Product Manager for ENERGY STAR Residential Light Fixtures, at shiller.david@epa.gov.

APPENDIX D: Standard Operating Procedure

ENERGY STAR Qualified Residential Light Fixtures
Standard Operating Procedure for Performance Failures
Supported by Laboratory Test Documentation

Purpose:

This Standard Operating Procedure (SOP) will cover ENERGY STAR qualified Residential Light Fixture (RLF) third party performance complaints that are supported with testing documentation conducted by a manufacturer-independent, NVLAP accredited laboratory. This SOP covers *Quality Assurance Testing and Challenge Testing* per the RLF 4.0 specification.

Definitions:

Unqualified Product – Product does not meet the current ENERGY STAR program requirements/specification.

De-listed Product – Product does not meet the current ENERGY STAR specification, and does not appear on the current ENERGY STAR qualified product Web list

Third Party: Any organization other than EPA, DOE, or one of their contractors. Third parties include utilities, energy efficiency program sponsors, energy efficiency program administrators, manufacturers, and retailers.

SOP:

1. Review and compare the laboratory test results with product information already submitted by the ENERGY STAR manufacturer within five days of receiving testing documentation.
    - Obtain clarification on the data, test results, and testing methods from the third party source, if necessary.
    - Develop a summary of non-compliance issues for internal ICF/EPA review.
2. Within ten days of receiving testing documentation, provide written notification to manufacturer, delivered via FedEx, indicating that tested products failed the ENERGY STAR performance requirements for Residential Light Fixtures (RLF): Version 4.0 and will be unqualified and de-listed from the ENERGY STAR RLF Qualified Products List for a minimum of six months so the partner can make necessary improvements to the products. This notification will also include the following:
    - Direction to the manufacturer to supply, in writing, a corrective action plan within five business days.
    - The notice sent to the manufacturer will contain language to the effect: "Only those products that meet ENERGY STAR specification can bear the ENERGY STAR label. Therefore, manufacturers must cease labeling unqualified product immediately and cease shipment of already labeled product within 30 days."

- At any time manufacturer may resubmit products for re-qualification. However, products will not be re-listed until the corrective action plan is submitted and approved and the six-month time period is complete.

3. Upon receipt of corrective action plan send manufacturer confirmation of receipt via email. Review corrective action plan within five business days. If necessary contact manufacturer for clarification.

3a. If manufacturer does not submit the corrective action plan by day five, contact the manufacturer via email and telephone to determine why they have not responded. Provide two additional days for manufacturer to submit corrective action plan.

   - If manufacturer continues to fail to respond after the two day period, inform them in writing, delivered via FedEx, that the product(s) will be removed from the ENERGY STAR Web site indefinitely.

4. The additional product information and testing documentation submitted by the partner is reviewed for compliance within 5 business days from the date of receipt of documentation.

   - If additional documentation is approved the product will be re-qualified and re-listed at the end of the six month delisting period.
   - In the event that significant concerns remain, products will remain de-listed until the partner can make necessary improvements to the products.

5. Partners whose products are repeatedly found to be in violation of the specification will be terminated from the ENERGY STAR program.